Results: The data confirmed that basal cells of normal buccal mucosa showed high levels of Class I, II, & EGFr expression. In OSCC a significant minority showed loss of class I antigens and this deficiency was more evident for the polymorphic antigens. Most OSCC cases showed overexpression of EGFr and >50% were positive for class II antigens. In all class II antigen positive cases there was a high degree of T cell infiltration.

Parallel studies in >45 ameloblastomas demonstrated that; a) loss of class I antigens was equal or higher than in OSCC, b) the expression of EGFr was detected only in a small number of cases, and c) in no case was high T cell infiltration or class II expression found.

Conclusion: These data clearly confirmed that at least two important signals were necessary for aggressive growth of the heterogenous malignant cells of OSCC or salivary malignancy as compared with the benign cell variants found in ameloblastoma. The malignancy appeared to have the capacity to escape the immune detection mechanisms whilst at the same time gaining self perpetuating potential (as demonstrated by overexpression of EGFr). In conclusion the data suggested that the screening of cell surface molecules by Mabs could assist clinical managements.

617 POSTER

Treatment outcome in patients (pts) with loco-regional relapse (LRR) of undifferentiated carcinoma of nasopharyngeal type (UCNT)

A. Hasbini[1], A. Auperin[2], M. Bouaziz[3], N. Chouaki[4], R. De Crevoisier[5], J. Bourhis[6], J.P. Armand[7], F. Eschwege[8], E. Cvitkovic[9], E. Raymond[10]. *[1]Gustave Roussy, Villejuif, France*

Between 03/87 and 12/95, 51 pts were treated for LRR of UCNT at IGR. Pts characteristics: M 37/F 14, median age 51 years [21–72], nodal staging of initial disease (ID) (UICC 1987): N0 13%, N1 10%, N2a 13%, N2b 18%, N2c 23%, N3 23%, 100% M0. ID was treated by radiotherapy (RT) 16 pts, associated to cisplatin-epirubicin based chemotherapy (CT) 34 pts; median delay between LRR and ID: 22 months (mts) [7–120]; site of relapse: nasopharynx 21 pts, with nodal involvement 16 pts, nodal alone 14 pts. Treatment according to LRR stage included: RT alone (13 pts), CT alone (11 pts), RT + CT (27 pts) with the same epirubicin-cisplatin based CT. With a median follow-up of 39 mts [2–120], median survival is 30 mts and evolution marked by metastatic spread in 25% of pts at 2 years. There was 13 long term surviving pts (>36 mts). Site of relapse, delay between ID and LRR, and status of nodal ID did not influence prognosis. LRR of UCNT can be controlled by RTñCT with some success. Lack of control with metastatic involvement could explain the poor prognosis.

618 POSTER

Proliferation rate as a predictor on nasopharyngeal cancer radiation response

S. Gondhowiardjo[1], R. Susworo[2], A. Roezin[3], M. Kanoko[4], S. Hartini[5]. *[1]Fac. of Medicine, Univ. of Indonesia, Radiotherapy Sub Division, Dept. of Radiology, Jakarta; [2]Fac. of Medicine, Univ. of Indonesia, Radiotherapy Sub division, Dept. of Radiology, Jakarta; [3]Fac of Medicine, Univ. of Indonesia Dept of ENT, Jakarta; [4]Fac. of Medicine, Univ. of Indonesia, Dept. of Pathology, Jakarta; [5]Dharmais Cancer hospital, Dept of Pathology, Jakarta, Indonesia*

Backgound: Irradiation is still the treatment of choice in NPC treatment. Up to now there is no accurate predictor on radiation response, since that the similar histo-morphological pattern, as a well known prognostic factor can revealed a wide range of treatment outcomes. Cellular tumor behaviour such as proliferation activity is proposed to influence the radiation response since that the G2 and M phases are the most radiosensitive cells.

Purpose: to find out the role of proliferation rate and other clinical factors in NPC as a predictor of radiation response.

Materials and Methods: Clinical stage and radiation response were collected from 116 patients. The proliferation rate from those patients were obtained flow-cytometrically (S-phase fraction). The radiation response were established clinically (nasopharyngoscop), CT scanning and pathologically.

Results: The range of the patients age is 15–70 year, and 70% of the patients consist of male. The SPF mean was 14.62 ± 10.18%, and 65% of our patients were T3 and T4, whereby the N2-3 group consist with 75% of them. Fourteen percents of the patients were Hsu type I, 48% were Hsu type II and the rest are belong to Hsu type III. There is a significant correlation between the proliferation value with the radiation response ($p = 0.001$). The complete and incomplete radiation response group of patients has the SPF mean value of 11.3% ± 9% and 18.5% ± 11.7% respectively ($P = 0.001$, OR = 1.07), with cut off level at the SPF 11%. There were 61% of cases with SPF < 11% revealed complete irradiation response versus 39% with partial response. On the other hand there were 32% of patients revealed complete radiation response versus 68% with artial response ($p = 0.01$, OR = 5.5). There is no correlation between the proliferation rate and the radiation response with the histology pattern of NPC. Multivariate analysis (SPF, histological pattern, tumor and nodal size) shown that only SPF has a role to influence the radiation response ($p = 0.02$).

Conclusions: SPF as one of the proliferation rate parameter can be used as a radiation response predictor of NPC. It is assumed that the patients with high proliferation rate should be irradiated with the inconventional irradiation scheme such as hyperfractionated irradiation, or combined with other modality that will en chanced the radiation effect, since that the proliferation is to fast for once a day irradiation scheme.

619 POSTER

Influence of haemoglobin on radiotherapy of head and neck cancers

W. Dobrowsky[1,2], J. Naudé[1]. *[1]Allgenemeines Krankenhaus der Stadt Wien, Dept. Radiotherapy and Radiobiology, Vienna; [2]Krankenhaus der Stadt Wien – Lainz, Sonserabteilung für Strahlentherapie, Vienna, Austria*

Purpose: The role of haemoglobin (Hb) level prior to radiotherapy was examined in 3 groups of patientswith head and neck cancers. The role of Hb with regard to response to therapy and survival was evaluated.

Patients and Methods: Patients with laryngeal cancer treated by conventionally fractionated radiotherapy (CF) from 1972–1990 (N = 327), patients with oral cavity or oropharyngeal cancers treated by preoperative radio (CF)-chemotherapy (MMC + 5-FU) from 1985–1989 (N = 96) and patients with CF vs. accelerated hyperfractionation (V-CHART) with or without chemotherapy (mitomycin C) treated in a randomised trial from 1990–1997 were evaluated with regard to treatment response and survival in relation to their initial Hb level.

Results: The results indicate that Hb level influences both response rates and survival in patients treated by conventional fractionation (Larynx $p = 0.02$, CF-arm (study) $p = 0.03$). Hb influences response rates after radio (CF)-chemotherapy ($p < 0.005$), but not survival. After V-CHART the role of Hb is almost statistically significant at $p = 0.07$ for response and significant for survival ($p = 0.016$). In the trial arm V-CHART + MMC the influence of Hb was neither seen for response ($p = 0.8$) nor for survival ($p = 0.7$).

Conclusion: The role of Hb plays an important role in response and survival of patients undergoing radiotherapy as single modality therapy and radio-chemotherapy when radiotherapy is given as conventionalfractionation. There is no influence of Hb when a very short fractionation schedule is applied together with MMC, a bioreductive drug with preferential toxicity in hypoxic tumour cells. This underlines the importance of tumour hypoxia as a major factor for tumour recurrence and the necessity to find ways to improve tumour oxygenation and development of regimens with chemotherapeutic drugs with specific toxicities.

620 POSTER

Poor prognosis was found in nasopharyngeal cancer patients with low glucose-6-phosphate-dehydrogenase

A.J. Cheng, L.H. Chen, J.T. Chang, D. Chiu. *University and Chang Gung Memorial Hospital, Taoyuan 333, Taiwan*

Nasopharyngeal carcinoma (NPC) is a tumor of endemic distribution among well-defined ethnic groups, prevalent in several world regions. Southeastern China and Taiwan have the highest incidence (about 30 per 100,000 persons per year). Glucose-6-phosphate-dehydrogenase (G6PD) deficiency, a sex-linked disorder, is one of the most common enzymopathies in Taiwan. The major role of G6PD is to generate NADPH to protect cells from oxidative damage and to reduce the risk of certain degenerative disease, such as aging and cancer. With such a high coincidence of epidemic distribution of NPC and G6PD deficiency, as well as the house-keeping function of G6PD in cellular oxidative defense, we investigate the correlation of G6PD activity with NPC. The stage of NPC was classified by ACJJ (1997) criteria. G6PD levels were determined in 117 consequent NPC male patients. The mean G6PD level was 7.53 U/gHb (with standard deviation of 2.32 U/gHb), that was much lower than normal individuals (normal ranging 8–18 U/gHb). In addition, 19.5% of NPC patients has low G6PD activity (<6.4 U/gHg); 11.1% of NPC patients has very low G6PD activity (<5 U/gHb), which was higher frequency than population in Taiwan (~4%). The level of G6PD activity had no correlation with tumor stage or lymph node metastasis, but was significantly correlated with treatment failure (recurrence and/or distant metastasis) (30% vs 15.8% of treatment failure cases in G6PD level less